Title: Social Participation Reduces Depressive Symptomatology in Adolescents with Autism: An Ecological Momentary Assessment Study

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Introduction: Depression is a commonly reported and concerning mental health comorbidity in autism spectrum disorder (ASD; Mazefsky, Kao, & Oswald, 2011), with estimates as high as 44% (Strang et al., 2012). Despite the US Preventative Services Task (USPSTF) (Siu & Bibbins, 2016) recommendations for universal screening, depression is often overlooked in adolescence who are both typically developing (Leaf et al., 1996) and those with ASD (DeFilippis, 2018). The overlapping features of ASD and depression (e.g., an increase in obsessive and ritualistic thinking, agitation, self-injury, sleep disturbances and a decrease in former interests and adaptive functioning) may further increase the risk of overlooking co-occurring depression amongst those with ASD (DeFilippis, 2018). Thus, identification of markers of depressive symptomatology in ASD is an urgent concern. Moreover, providing evidence for intervention targets in the ASD population is an important next step in reducing the impact of depression in this vulnerable group. Given the inherent difficulties with relying on parent report and/or retrospective self reports to assessing depressive symptoms, we used ecological momentary assessment (EMA) to evaluate depressive symptomatology and dimensions of participation in adolescents with ASD. EMA may be particularly advantageous in both identifying depressive symptomatology and treatment targets as these approaches capture the nuance of emotional patterns characteristic of depression (Koval et al., 2013). The aims of this study are to (1) evaluate the role of ecological momentary assessment in identifying individuals with ASD at risk for depression and (2) test the hypothesis that participation in positive social interactions and enjoyable activities is related to positive affect in this population

Method: 18 adolescents (ages 11 to 17) and their caregivers were recruited to the study. Of these 18, 17 were eligible to complete based on intelligence quotient (IQ) above 80 and the adolescent has regular access to mobile phone. Subjects also completed the Child Depression Inventory (CDI) and the Children Depression Inventory-Parent (CDI-P). Following their screening visit, adolescents completed an EMA of depressive symptoms in which they were prompted via text message six semi-random times per day for seven consecutive days. The EMA prompt consisted of a link to a Qualtrics survey with the Positive and Negative Affect Scale, Children’s version short form (PANAS-C-SF) and a brief questionnaire about their current activities.

Results: A strong linear relationship was found between parent-reported depressive symptoms and child reported momentary mean negative affect (B=2.05, p<.01), but not child-reported depressive symptoms (B=0.90, p=0.17), suggesting that EMA of mood via PANAS-C-SF may be a more advantageous self-report tool in the ASD population than retrospective accounts of depressive symptomatology. Participants’ enjoyment of their current activity was moderately correlated with their level of positive affect (r=0.52, Cl=0.46-0.58, p<.001), and negatively correlated to negative affect (r=-0.33, Cl=-0.40-0.25, p<.001). We created a generalized estimating equation (GEE) to test the effect of the predictor variable, current enjoyment of the activity, on the outcome variable, mean positive/negative affect, while controlling for participants’ current satisfaction with their current social participation. Both the quality of the activity (B=.1217, p=0.02) and the quality of the participants’ social participation (B=.13, p<.01) had a significant effect on mean positive affect. Negative affect was related to the quality of participants’ social participation (B=-.03, p<.01) and not their current satisfaction with current activity (B=0.01, p=.61). We used an analysis of covariance (ANCOVA) assuming random effects across participants to test whether the relationship between the dependent variable (mean positive affect) and the independent variable (quality of current social interaction) is different across groups based on the categorical variable, amount of people around you (four levels: (1) no one, I am alone; (2) two to five people; (3) 6-9 people, or (4) more than 10 people). The quality of social interaction had the greatest effect on mean positive affect (p<.01) when individuals reported being in large groups (more than 10 people).

Discussion: Using a mobile-based assessment methods, we assessed the relationship of emotional patterns, qualities of social participation, and activity participation amongst adolescents with ASD. The most significant finding of the present study was that dimensions of participation (enjoyment of current activity and enjoyment of current social interaction) was associated with positive affect. Surprisingly, participation in larger groups led to more positive affect. These findings suggest that social participation may be a key factor in reducing negative affect in the present.
References:


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